

## CLAIMS

What is claimed is:

1. A resynchronization device for an Ethernet network device including a transmitter and a receiver, comprising:
  - a detector that detects faulty code groups received by the receiver;
  - a counter that counts said faulty code groups that are detected during a predetermined period; and
  - a resynchronization trigger that asserts a resynchronization signal if said counter exceeds a predetermined threshold during said predetermined period.
2. The resynchronization device of claim 1 wherein said faulty code groups include false carriers.
3. The resynchronization device of claim 2 wherein said false carriers include non-idle code groups other than frame delimiters.
4. The resynchronization device of claim 1 wherein said faulty code groups include idle code groups that match idle code groups generated by the transmitter of the local network device.

5. The resynchronization device of claim 1 wherein said resynchronization signal is a loc\_rcvr\_status signal.

6. The resynchronization device of claim 5 wherein said loc\_rcvr\_status signal is forced to a first state when said counter exceeds said predetermined threshold during said predetermined period.

7. The resynchronization device of claim 1 wherein the network device is compliant with IEEE section 802.3ab.

8. The resynchronization device of claim 1 wherein said resynchronization trigger counts a number of times that said resynchronization signal is asserted without bringing down a link.

9. The resynchronization device of claim 8 wherein said resynchronization trigger does not assert said resynchronization signal when said resynchronization signal count reaches a predetermined number.

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10. The resynchronization device of claim 4 further comprising a timer that times said predetermined period, wherein at least one of said timer and said count of said matching idle code groups is reset when non-matching idle code groups are received.

11. A false carrier resynchronization device for an Ethernet network device including a transmitter and a receiver, comprising:

a false carrier detector that detects false carriers received by the receiver;

a counter that counts said false carriers that are detected by said false carrier detector during a predetermined period; and

a resynchronization trigger that asserts a resynchronization signal if said counter exceeds a predetermined threshold during said predetermined period.

12. The false carrier resynchronization device of claim 11 wherein said false carriers include non-idle code groups other than frame delimiters.

13. The false carrier resynchronization device of claim 11 wherein said resynchronization signal is a loc\_rcvr\_status signal.

14. The false carrier resynchronization device of claim 13 wherein said loc\_rcvr\_status signal is forced to a first state when said counter exceeds said predetermined threshold during said predetermined period.

15. The false carrier resynchronization device of claim 11 wherein the network device is compliant with IEEE section 802.3ab.

16. The false carrier resynchronization device of claim 11 wherein said resynchronization trigger asserts said resynchronization signal a predetermined number of times.

17. A descrambler resynchronization device for an Ethernet network device including a transmitter and a receiver, comprising:

a descrambler detector that detects idle code groups that match idle code groups generated by the transmitter of the network device;

a counter that counts said matching idle code groups that are detected by said descrambler detector during a predetermined period; and

a resynchronization trigger that asserts a resynchronization signal if said counter exceeds a predetermined threshold during said predetermined period.

18. The descrambler resynchronization device of claim 17 further comprising a timer that times said predetermined period, wherein at least one of said timer and said count of said matching idle code groups is reset when non-matching idle code groups are received.

19. The descrambler resynchronization device of claim 17 wherein said resynchronization signal is a loc\_rcvr\_status signal.

20. The descrambler resynchronization device of claim 19 wherein said loc\_rcvr\_status signal is forced to a first state when said counter exceeds said predetermined threshold during said predetermined period.

21. The descrambler resynchronization device of claim 17 wherein the network device is compliant with IEEE section 802.3ab.

22. The descrambler resynchronization device of claim 17 wherein said resynchronization trigger asserts said resynchronization signal a predetermined number of times.

23. A resynchronization device for an Ethernet network device including a transmitter and a receiver, comprising:

detecting means for detecting faulty code groups received by the receiver;

counting means for counting said faulty code groups that are detected during a predetermined period; and

trigger means for asserting a resynchronization signal if said counting means exceeds a predetermined threshold during said predetermined period.

24. The resynchronization device of claim 23 wherein said faulty code groups include false carriers.

25. The resynchronization device of claim 24 wherein said false carriers include non-idle code groups other than frame delimiters.

26. The resynchronization device of claim 23 wherein said faulty code groups include idle code groups that match idle code groups generated by the transmitter of the local network device.

27. The resynchronization device of claim 23 wherein said resynchronization signal is a loc\_rcvr\_status signal.

28. The resynchronization device of claim 27 wherein said loc\_rcvr\_status signal is forced to a first state when said counting means exceeds said predetermined threshold during said predetermined period.

29. The resynchronization device of claim 23 wherein the network device is compliant with IEEE section 802.3ab.

30. The resynchronization device of claim 23 wherein said trigger means counts a number of times that said resynchronization signal is asserted without bringing down a link.

31. The resynchronization device of claim 30 wherein said trigger means does not assert said resynchronization signal when said resynchronization signal count reaches a predetermined number.

32. The resynchronization device of claim 26 further comprising timing means for timing said predetermined period, wherein at least one of said timing means and said count of said matching idle code groups is reset when non-matching idle code groups are received.

33. A false carrier resynchronization device for an Ethernet network device including a transmitter and a receiver, comprising:

    false carrier detecting means for detecting false carriers received by the receiver;

    counting means for counting said false carriers that are detected by said false carrier detecting means during a predetermined period; and

    trigger means for asserting a resynchronization signal if said counting means exceeds a predetermined threshold during said predetermined period.

34. The false carrier resynchronization device of claim 33 wherein said false carriers include non-idle code groups other than frame delimiters.

35. The false carrier resynchronization device of claim 33 wherein said resynchronization signal is a loc\_rcvr\_status signal.

36. The false carrier resynchronization device of claim 35 wherein said loc\_rcvr\_status signal is forced to a first state when said counting means exceeds said predetermined threshold during said predetermined period.

37. The false carrier resynchronization device of claim 33 wherein the network device is compliant with IEEE section 802.3ab.

38. The false carrier resynchronization device of claim 33 wherein said trigger means asserts said resynchronization signal a predetermined number of times.

39. A descrambler resynchronization device for an Ethernet network device including a transmitter and a receiver, comprising:

descrambler detecting means for detecting idle code groups that match idle code groups generated by the transmitter of the network device;  
counting means for counting said matching idle code groups that are detected by said descrambler detecting means during a predetermined period; and

trigger means for asserting a resynchronization signal if said counting means exceeds a predetermined threshold during said predetermined period.

40. The descrambler resynchronization device of claim 39 further comprising timing means for timing said predetermined period, wherein at least one of said timing means and said count of said matching idle code groups is reset when non-matching idle code groups are received.

41. The descrambler resynchronization device of claim 39 wherein said resynchronization signal is a loc\_rcvr\_status signal.

42. The descrambler resynchronization device of claim 41 wherein said loc\_rcvr\_status signal is forced to a first state when said counting means exceeds said predetermined threshold during said predetermined period.

43. The descrambler resynchronization device of claim 39 wherein the network device is compliant with IEEE section 802.3ab.

44. The descrambler resynchronization device of claim 39 wherein said trigger means asserts said resynchronization signal a predetermined number of times.

45. A method for resynchronizing an Ethernet network device including a transmitter and a receiver, comprising:

detecting faulty code groups received by the receiver;

counting said faulty code groups that are detected during a predetermined period; and

asserting a resynchronization signal if said count exceeds a predetermined threshold during said predetermined period.

46. The method of claim 45 wherein said faulty code groups include false carriers.

47. The method of claim 46 wherein said false carriers include non-idle code groups other than frame delimiters.

48. The method of claim 45 wherein said faulty code groups include idle code groups that match idle code groups generated by the transmitter of the local network device.

49. The method of claim 45 wherein said resynchronization signal is a loc\_rcvr\_status signal.

50. The method of claim 49 further comprising forcing said loc\_rcvr\_status signal to a first state when said count exceeds said predetermined threshold during said predetermined period.

51. The method of claim 45 wherein the network device is compliant with IEEE section 802.3ab.

52. The method of claim 45 further comprising counting a number of times that said resynchronization signal is asserted without bringing down a link.

53. The method of claim 52 further comprising disabling assertion of said resynchronization signal when said resynchronization signal count reaches a predetermined number.

54. The method of claim 48 further comprising resetting at least one of said predetermined period and said count of said matching idle code groups when non-matching idle code groups are received.

55. A method for providing false carrier resynchronization in an Ethernet network device including a transmitter and a receiver, comprising:

detecting false carriers received by the receiver;

counting said false carriers that are detected during a predetermined period; and

asserting a resynchronization signal if said count exceeds a predetermined threshold during said predetermined period.

56. The method of claim 55 wherein said false carriers include non-idle code groups other than frame delimiters.

57. The method of claim 55 wherein said resynchronization signal is a loc\_rcvr\_status signal.

58. The method of claim 57 wherein said loc\_rcvr\_status signal is forced to a first state when said count exceeds said predetermined threshold during said predetermined period.

59. The method of claim 55 wherein the network device is compliant with IEEE section 802.3ab.

60. The method of claim 55 further comprising asserting said resynchronization signal a predetermined number of times.

61. A method for providing descrambler resynchronization in an Ethernet network device including a transmitter and a receiver, comprising:

detecting idle code groups that match idle code groups generated by the transmitter of the network device;

counting said matching idle code groups that are detected during a predetermined period; and

asserting a resynchronization signal if said count exceeds a predetermined threshold during said predetermined period.

62. The method of claim 61 further comprising resetting at least one of said predetermined period and said count of said matching idle code groups when non-matching idle code groups are received.

63. The method of claim 61 wherein said resynchronization signal is a loc\_rcvr\_status signal.

64. The method of claim 63 further comprising forcing said loc\_rcvr\_status signal to a first state when said count exceeds said predetermined threshold during said predetermined period.

65. The method of claim 61 wherein the network device is compliant with IEEE section 802.3ab.

66. The method of claim 61 further comprising asserting said resynchronization signal a predetermined number of times.